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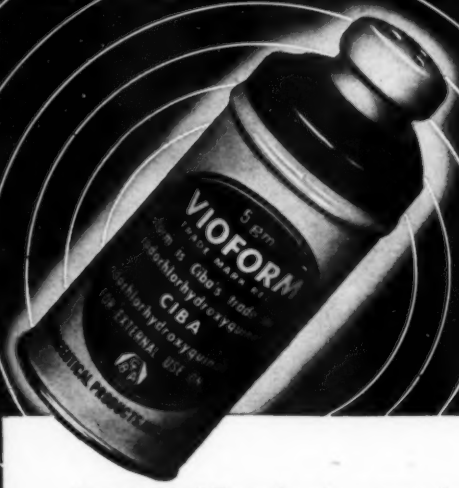

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TREATMENT AND PREVENTION OF DERMATOPHYTOSIS AND RELATED CONDITIONS

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THE TREATMENT and prevention of dermatitis of the feet, so-called "athlete's foot," is a troublesome problem in the Army. The maintenance of healthy feet and the management of apparently trivial lesions that may lead to painful skin injuries or severe secondary infections obviously are of military importance.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development of the National Research Council and Columbia University. The findings, which should not be considered final, will be stated somewhat categorically for the sake of brevity. Some of the recommendations, even if they seem obvious, may be of interest to medical officers.

Inflammation of the skin of the feet may result from many causes and, in any individual case, several factors may contribute to the etiology. The following are recognized:

1. *Mycotic infection.* One of four species of fungi, *Trichophyton gypseum, Trichophyton purpureum, Epidermophyton inguinale,* or *Monilia albicans* (or probable variants of these species) are found in the majority of cases of dermatitis of the feet. The Trichophyta are found also in 10 per cent or more of normal feet. When the skin becomes macerated by sweat or water, they proliferate and contribute to the ensuing dermatitis.

2. *Pyogenic infection. Staphylococcus aureus* is also found in the majority of cases of dermatitis of the feet and in some is apparently the sole cause. Staphylococcus or streptococcus causes most cases of cellulitis and lymphangitis that follow dermatophytosis, although lymphangitis may result from sensitization to the Trichophyta without pyogenic infection.

3. *Allergy.* Any mycotic infection which itches severely shows an eczematous reaction in the skin which indicates sensitization to the fungus. Sensitization to staphylococcus is a factor of probable importance. Sensitization to shoe polish and to antiseptics and fungicides causes type of dermatitis frequently mistaken for mycotic infection.

4. *Hyperidrosis.* Excessive sweating induces maceration and desquamation of the skin and makes it susceptible to bacterial invasion which is apparently nonspecific. This is responsible for many painful and persistent cases of dermatitis of the feet. The causes of hyperidrosis are often obscure and probably multiple. Foot strain or bad hygiene can be recognized as responsible in some cases.

5. *Trauma.* Excoriation by fingernails or violent rubbing with a towel is responsible for much damage to toes and their webs. Friction from sand or other foreign bodies in the shoe is sometimes a factor. It is interesting, however, that friction blisters are rarely the starting point of a dermatitis.

6. *Hypostasis.* The localization of these lesions to the feet is probably due in part to high venous pressure. The long periods of standing imposed on many troops is probably an etiological factor in foot dermatitis.

Trauma and hypostasis, however, seem only contributing factors and cannot be considered the sole cause of cases of dermatitis.

General Principles

Successful treatment of dermatitis of the feet requires consideration of all these possibly etiological factors. Treatment must combat the causative factors involved and must also be adapted to the condition of the skin. For that reason, methods will be discussed under the type of case to which they are applicable. There are, however, two principles that must be followed in all cases:

1. *Hygienic measures are of first importance.*

a. Cleanliness by frequent and careful washing of the feet and frequent changing of socks.

b. Dryness by careful wiping especially between the toes after each bath, at same time taking care not to injure the toe webs by violent rubbing.

c. Aeration by removing shoes and socks on every possible occasion.

d. Elevation of the feet by lying down during rest periods so as to relieve hypostatic congestion.

These measures seem obvious but require emphasis. Limitation of facilities and carelessness as to bathing, wearing heavy shoes during violent exercise in hot weather, and prolonged standing as well as marching are probably the factors which make dermatophytosis so prevalent among troops. Many cases will clear up without medication if the patients are allowed to rest with their shoes off.

2. *Treatment must avoid injury.* Emphasis on the infectious origin of dermatophytosis tempts many to use strong fungicides and antiseptics. When the first fails, a still stronger and more irritating one is often applied with the result that the patient suffers more from treatment than from his original infection. Complete sterilization of the skin or destruction of the last fungus spore may never be possible. Success in treatment probably depends on inhibiting the growth of

fungi and bacteria until the skin can heal. This can usually be accomplished by relatively weak, non-irritating fungicides and antiseptics. Occasional chronic cases with involvement of the thick stratum corneum of the sole may require more energetic treatment. Successful fungistatic treatment requires frequent and regular application which can only be accomplished by issuing medication to the soldier for self treatment.

Treatment must vary with the etiology and type of involvement, but even among cases where these factors seem identical, some individuals will be intolerant of applications satisfactory to most. Alternative medications must be provided for such cases. New fungicides are under study which offer promise of more effective treatment, but good results can be obtained by the intelligent use of familiar treatment agents which are readily available.

Dermatophytosis

Fungi have been found in about 70 per cent of cases of intertrigo of the toes and in over 90 per cent of dysidrotic lesions on the soles. The most effective treatment agents in such cases are those which attack the fungus. It has been impossible to sift thoroughly all the fungicides recommended, most of which doubtless have proved effective in some cases. In general, iodine, a number of mercurials, thymol, and several essential oils have seemed low in effectiveness and irritating in a significant number of cases. The dyes, too, appear weakly fungicidal. Of the familiar fungicides, benzoic acid, salicylic acid, and sulfur appear the most useful if properly prepared.

The vehicle used in the application of these fungicides is important. Aqueous solutions lack in penetration. Solutions in alcohol, acetone, or chloroform appear more effective but dry the skin and promote fissuring on continuous use. Ointments, especially petrolatum, often macerate the skin. The addition of a powder to an ointment as in Lassar's paste lessens this effect, but for soldiers on active foot duty ointments should be used only at night and wiped off very thoroughly in the morning and a powder applied to the toes. The G.I. foot powder or plain talc is satisfactory for this purpose. The addition of 10 to 25 per cent bentonite to talc powder increases its absorptive quality. Various types of dermatophytosis require separate consideration:

1. *Simple intertrigo.* Most cases of dermatophytosis begin with involvement of the sides and webs of the toes. Such lesions may cause intense itching though they often persist for years without attracting attention. Even if asymptomatic, they require treatment because they form the starting point of more troublesome types of dermatophytosis. Attempt should be made to differentiate them from the purely pyogenic or hyperidrotic lesions described below, and the fact that lesions of syphilis, psoriasis, and other generalized dermatoses may occur between the toes must be borne in mind.

An ointment or paint should be applied to the sides and webs of all the toes and to the entire sole of the foot every night until the skin appears normal. To prevent relapse, the same treatment should be applied once a week throughout the warm season. An effective fungistatic paint which is not drying is [No. 1] *Benzoic Acid Paint*, the formula for which is benzoic acid 5 gm., acetone 15 cc., cottonseed oil 85 cc. Salicylic acid and merthiolate paint [No. 12], or iodine, salicylic and benzoic paint [No. 11] may be used if a more drying effect is desired.

For obstinate cases ointments are often more effective. One of the best is [No. 2] *Sulfur and Salicylic Ointment,*[1] the formula of which is salicylic acid 10 gm., sulfur ppt. 10 gm., starch powder 30 gm., petrolatum 50 gm. *Whitfield's Ointment* (one-half strength) [No. 3] made on the following formula is also effective: salicylic acid 3 gm., benzoic acid 6 gm., benzoinated lard 31 gm., Lassar's paste 60 gm. Full-strength Whitfield's ointment should never be used except in chronic and obstinate cases. Either of the above-named ointments must be wiped off and replaced by powder before exercise and even so may produce some maceration if used on active duty in very hot weather.

In field dispensaries if supplies for issue to troops are not available, a slight alteration of formula [No. 1] renders a single application more effective, though this paint is too drying for daily use. The formula for [No. 4] *Benzoic Acid Paint,* for application in dispensary, is benzoic acid 5 gm., acetone 85 cc., cottonseed oil 10 cc.

2. *Fissured and denuded cases.* The most frequent cause of pain in dermatophytosis is fissuring of the skin on the webs or bulbs of the toes where it has been weakened by persistent dermatitis. Excoriation by fingernails or the rupture of large vesicles may also produce painful areas denuded of their protective stratum corneum. These developments which expose the rete govern the choice of treatment. Alcoholic or acetone solutions should never be applied, and agents such as salicylic or benzoic acids which cause exfoliation should be avoided.

All such cases benefit from care in the dispensary or clinic, and the severe ones require frequent dressings. Small fissures may be handled satisfactorily by painting with 5 per cent aqueous silver nitrate. (This solution is best kept in small dark-glass bottles containing about 5 cc., as frequent dipping into the solution with a swab precipitates it.) For more severe lesions we have found the most useful dressing a gauze similar to ordinary vaseline gauze, but with some bacteriostatic agent added. A suitable formula [No. 5], *Zephiran Ointment,* would be as follows: zephiran concentrate 10 per cent 5 cc., water 20 cc., lanolin 25 cc., petrolatum 50 cc.

A pack of 20 to 100 layers of gauze cut in pieces 2 by 5 inches, or other convenient size, is placed in a small catheter tray, butter dish, or similar metal or glass box. The folded sterile gauze supplied for dressings is usually satisfactory. Bandage gauze is too stiff to mold well to the skin surface, and most gauze supplied in bolts is too flimsy. Melted zephiran ointment is poured over this, and the dish is heated to from 60° to 100° C. for one-half hour by placing on top of a water bath or in a drying oven. Sufficient ointment should be used so that the mesh of the gauze remains filled with it after cooling. Suitable pieces of gauze are cut off with scissors and laid over fissures and denuded areas. They are useful in dressing broken blisters and all types of small skin injuries. The ointment will cause them to adhere for a while, but they are better held on with a gauze pad secured by plaster or bandage, or by a band-aid type of dressing.

The numerals in brackets are for convenience in referring to the various formulas.

1. Taylor, S. J., Jr.: Sipmle Treatment for Epidermatophytosis, Mil. Surgeon, 91:93-96, July, 1942.

In some obstinate cases 5 per cent sulfathiazole ointment succeeds when zephiran ointment does not.

3. *Plantar lesions.* On the sole of the foot where the stratum corneum is thick the vesicles of dermatophytosis do not rupture early but enlarge to form multiocular bullae often 5 and sometimes 10 mm. in diameter. Satellite vesicles appear around them and form a gradually extending group. They are filled with a characteristic clear, viscid fluid. On drying, they form desquamating areas and repeated desquamation may leave the skin thin and sensitive. This "dysidrotic" type of dermatophytosis may itch intensely, and areas denuded by rupture of the bullae make walking painful. Occasionally, however, large bullae are seen which cause no symptoms whatever. Invasion of the sole does not always cause vesiculation. Dry desquamating areas are seen in which fungus can be demonstrated. The appearance of the vesicular lesions is so familiar and characteristic that diagnosis presents few difficulties. They must, however, be differentiated from the vesicular lesions of erythema multiforme, drug eruptions, and acute steptococcus dermatitis. Syphilis and psoriasis may simulate the scaling lesions of dermatophytosis.

The lesion most frequently mistaken for dermatophytosis is the pustular bacterid. Here the primary lesions are minute and frequently hemorrhagic pustules appear in repeated showers on localized areas of the soles and palms. They occur characteristically at points of pressure. After repeated outbreaks the involved area becomes covered with psoriasiform scales. The resulting appearance has given origin to the misleading designation of "pustular psoriasis," often applied to these lesions. They are, in fact, cutaneous reactions to a distant focus of infection such as a tonsil or a tooth socket, and local treatment has little effect on their course.

Dysidrotic dermatophytosis is often resistant to treatment. In mild cases the remedies used for simple intertrigo [Nos. 1, 2, 3, and 4] may be effective. In acute cases or those which have been overtreated or where rupture of vesicles has caused extensive denudation, the usual fungicides cannot be used. Foot soaks for ten to thirty minutes are most effective in reducing the inflammation. Of these the best is [No. 6] *Potassium Permanganate Bath* (about 1:4000), the formula for which is potassium permanganate 15 grains, tap water 1 gallon.

Boric acid 4 per cent, magnesium sulfate 25 per cent (2 pounds in one gallon of water), or aluminum acetate solution prepared by dissolving one Burow's solution tablet, Domeboro, in 16 ounces of water. Double this strength may be used. Zephiran is one of the best foot soaks as it is an active fungicide and antiseptic. Twenty cc. of 10 per cent zephiran concentrate in two liters of water make a nonirritating bath. Other baths that are often useful are acriflavine 1:3000 in normal saline, and azochloramid 1:3000 prepared by dissolving 10 gm. of the stock azochloramid saline mixture in 1 liter of water. If the patient is ambulant, the foot should be dressed after soaking. If hospitalized, they often do best dried and exposed to the air. Zephiran gauze [No. 5] or boric acid ointment covered with a pad of dry gauze make the best dressings.

In chronic cases of dysidrotic dermatophytosis where the horny layer is intact, quite different procedures are needed. Parasites embedded in the thick stratum corneum are well protected from fungicides applied to the surface. It is often necessary to peel off the infected horny layer by applications too irritating to be used in the ordinary case. If the

reaction is severe, one must resume the foot baths used for acute cases. The following measures should not be used for men on active foot duty or applied to the thin skin on the dorsum of the foot: [No. 7] *Salicylic Acid Paste* containing salicylic acid (powdered) 20 gm., cottonseed oil 20 cc., Lassar's zinc paste 60 gm. This paste may be bandaged over the affected area daily for three to five days. When the skin turns white, it is allowed to dry and to peel. After a week, the ointment may be reapplied. Full-strength Whitfield's ointment is permissible. Other alternative procedures are daily painting with eugenol or [No. 8] *Chrysarobin Paint* (chrysarobin 2 gm., cottonseed oil 10 cc., chloroform 90 cc.). After a few successive peeling treatments, milder fungicides such as benzoic acid should again be used.

4. *Lesions on dorsum of foot.* Invasion by the fungus of the thinner skin on the dorsum of the foot rarely causes distinct vesicles. It usually causes slightly reddened scaling areas which may form distinct rings or may be diffuse. Mycelium is readily demonstrated in the scales. These desquamative lesions on the dorsum respond well to preparations such as No. 1 or to any simple fungicide.

A more frequent occurrence on the dorsum is the eczematous dermatophytid. Dermatophytosis of the feet may cause vesicular or eczematous eruptions on the hands or elsewhere in which no fungus can be demonstrated. These are probably caused by an allergic reaction to fungus spores or antigens transmitted from the focus on the foot through the blood stream. Eczematous lesions which appear on the feet contiguous with, or slightly removed from, a focus of mycotic infection are probably similar reactions to antigens absorbed by the lymphatics or spread over the surface. This type of reaction is frequent on the dorsum of the toes. As in the case of other dermatophytids, fungi cannot be demonstrated in these lesions. Often the only proof of their etiology is their disappearance when the responsible focus on the toes, sole, or nail is cleared.

It is not always possible to draw a sharp line between these two types of lesion. Gradations seem to occur between scaling lesions with little inflammatory reaction in which the fungus is abundant, and swollen, red, weeping patches in which no fungus can be found. It is possible than an allergic dermatitis may develop in an area of actual fungus infection. As the allergic reaction increases, the fungus is more and more effectively destroyed. The practical point is that when lesions show the swelling, redness, and fine vesiculation characteristic of eczema, they should not be treated with fungicides but with soothing applications, at least until the inflammatory reaction subsides. The area may be painted with aqueous gentian violet and then spread with Lassar's zinc paste and covered with a gauze dressing. The formula for [No. 9] *Aqueous Gentian Violet* is gentian violet 2 gm., zephiran concentrate 10 per cent 1 cc., alcohol 5 cc., water 90 cc. Wet compresses of boric acid or of Thiersch's solution are helpful. The formula for [No. 10] *Thiersch's Solution with Menthol* is menthol 0.2 gm., salicylic acid 0.25 gm., alcohol 95 per cent 10 cc., boric acid 2.00 gm., water q.s. ad. 100 cc. (This same solution is useful as an antipruritic lotion patted on lesions. If they are not exuding, it may be strengthened by increasing the menthol to 0.5 gm. and the alcohol to 50 cc.) At the same time, any focus of fungus growth on the toes or soles, or a pyogenic paronychia, from which antigen may be absorbed, should be actively treated.

5. *Follow-up treatment.* After an active dermatophytosis has subsided, the importance of follow-up treatment should be impressed on the patient. Hygienic measures should be stressed, and the patient should be given a fungicidal paint with instructions to paint the entire surfaces of the toes, the toe nails, and the entire soles of the feet once a week. Formulas No. 1 and No. 12 or iodine, salicylic, and benzoic (ISB) paint are satisfactory. The formula for [No. 11] *ISB Paint* is Tr. iodine (7 per cent) 15 cc., salicylic acid 3 gm., benzoic acid 6 gm., camphor 10 gm., alcohol q.s. ad. 100 cc.*

6. *Onychomycosis.* Invasion of the nails by fungi rarely causes symptoms but is probably the most frequent source of reinfection of the feet. The commonest lesion, a chalk-like spot which appears often where the bulb of the next toe overlies the nail, is not difficult to eradicate. Deep invasion which undermines the nail, causes it to thicken, and ultimately erodes the nail plate, is seldom affected by the simple application of fungicides to the surface. Removal of the nail entails too long disability to be practical except in rare cases and even this radical procedure often fails. There remain two possible procedures:

1. Repeated thorough removal of all portions of the nail that have become friable or loosened from the bed, followed by application of a fungicide. This requires the use of clippers, file, and curette, and as much care as a dentist employs in cleaning a tooth cavity. The patient can rarely make a thorough job of it, but a noncommissioned officer can be trained in this procedure.

2. Abandoning any attempt at cure, but applying a fungicide once or twice a week to the nail with the aim of preventing spread. For this purpose, tincture of iodine, chrysarobin paint [No. 8] or ISB paint [No. 11] may be used.

7. *Ringworm of the groin and trunk.* The same fungi found in dermatophytosis of the feet cause the marginate dermatitis of the groin which is prevalent among troops in hot weather. Circinate lesions often extend widely over the trunk especially around the waist where the belt presses. The same fungicides may be used as in the treatment of intertrigo of the feet, but both groin and trunk lesions are much more easily irritated than those on the thicker skin of the feet, and, on account of the accumulation of sweat in the groin, ointments are rarely tolerated there. Benzoic acid paint [No. 1] can usually be used without irritation. A very satisfactory paint for lesions that are not eczematized is [No. 12] *Salicylic Acid and Merthiolate Paint*,[2] the formula of which is salicylic acid 3 gm., Tr. merthiolate (1:1000) 100 cc. For the groin, the fungicide should be painted on at night and plain talc or G.I. foot powder applied liberally in the morning.

If the above preparations irritate, the lesions may be painted with gentian violet or 10 per cent argyrol until they become less sensitive. The use of concentrated iodine, salicylic acid, or mercurial preparations seems unwise; while often successful, they sometimes cause a dermatitis much worse than the original disease.

*Frazer's Solution (Med. Dept. Item No. 91098) is of practically identical composition.

2. Major James S. Snow, personal communication.

Pyogenic Lesions

Superficial staphylococcic lesions are extremely prevalent among troops in hot weather. They follow insect bites and scratches and often appear without detectable cause. They often occur on the dorsum of the foot. Between the toes they simulate mycotic intertrigo so closely that they are hard to differentiate without microscopic examination. It seems well whenever a case of supposed dermatophytosis shows marked redness, exudation, or crusting, to treat it first with zephiran ointment [No. 5] or gentian violet paint [No. 9] before proceeding to fungicidal measures. A freshly prepared paste of about 2 parts zinc peroxide and 3 parts lubricating jelly (Med. Dept. Item No. 12452) is often useful for pyogenic lesions. The zinc peroxide should be activated by heating at 140° C. for four hours in a hot-air sterilizer. Wet dressings with acriflavine 1:1000 in normal saline are sometimes effective in refactory cases.

The sulfonamides are the most effective agents for impetigo and other superficial pyogenic lesions. Objection is raised as to their routine use on account of the possibility of sensitizing patients. They will however be found useful and promptly effective in many lesions that resist all other measures. For most cases 5 per cent sulfathiazole in any convenient ointment base may be used. For exuding lesions the following paste is especially useful if spread on in a thin film so that it will not cake: [No. 13] *Sulfathiazole in Bentonite Paste*, the formula for which is sulfathiazole 5 gm., cottonseed oil 10 cc., bentonite 10 gm., water 90 cc. Soak the bentonite in water until a gelatinous paste is formed and then rub in the other ingredients.

The management of abscess, cellulitis and lymphangitis, the most serious sequelae of dermatophytosis, hardly comes within the scope of this paper. Such cases should be treated in the hospital. The infection is beyond the influence of local applications but responds well to sulfonamides internally. After recovery, the foot lesion which formed the portal of entry should be carefully and thoroughly treated to prevent a recurrence of the deep infection.

Allergic Dermatitis

Dermatitis from contact with sensitizing chemicals is indistinguishable morphologically from allergic reaction to fungi. Contact dermatitis rarely occurs on the sole. When such lesions occur on the feet, one must suspect first the medication previously applied as this is the most frequent cause. Polish or other chemicals in shoe leather is the next most frequent cause. Internal medications, especially the sulfonamides, may produce a similar dermatitis but it is rarely restricted to the feet. Allergy to food and inhaled substances is rarely or never a factor in these cases.

Identification of the responsible allergen requires thorough study, including the use of patch tests which is often impracticable under military conditions. Some clue may be obtained from the distribution of the lesions. Eczematous patches extending back from the interdigital clefts and occurring on the dorsum of the foot and ankle in rounded patches are frequently due to fungus. Those extending back from the base of the toenail are frequently due to pyogenic paronychia. Diffuse reactions on the dorsum of the foot, stopping sharply at the line of the shoe vamp or at the top of the shoe, are frequently due to shoe polish.

Symptomatic treatment consists in soothing and antipruritic applica-

tions. As the lesions are usually infected with staphylococci, a mild antiseptic, such as gentian violet, is often necessary. The measures described under "Lesions on Dorsum of Foot" are useful, especially the occlusive dressing with aqueous gentian violet [No. 9] and Lassar's zinc paste which protects the lesions if the exciting allergen is external.

Hyperidrosis

In about 30 per cent of the intertrigo cases seen at sick call during this study, we have been unable to demonstrate fungus although examinations have sometimes been repeated for eight to ten weeks. Some of these cases are probably dermatophytosis in which microscopic examination has failed, some are pyogenic infections; but the majority seem due primarily to excessive sweating. Accurate differentiation from mycotic intertrigo requires microscopic examination, but the following characteristics point to hyperidrosis as the cause:

1. Other evidence of profuse sweating of feet and hands, especially the characteristic local hyperidrosis of the soles. 2. Flat feet or other evidence of foot strain. 3. Cyanosis or other evidence of peripheral vascular disorder. 4. Edema of the toes. 5. Equal involvement of all interdigital spaces. 6. Excessive maceration with exceedingly foul odor. 7. Absence of vesicles or the collarettes which indicate ruptured vesicles. 8. Pain, usually described as "burning," rather than itching.

Local hyperidrosis. Hyperidrosis of the sole frequently causes a curious and typical lesion rarely seen in civilian life. It is probably the same condition described as "symmetrical lividity of the soles." The lesions are white plaques surrounded by pink or lilac halos, often on the bottom and sides of the heels, along the lateral border of the sole, or sometimes on the bulbs of the toes, especially where they rub together. Occasionally they are seen on the ball of the foot. In some cases they appear only after marching and disappear after rest; in others they are continuously present. The skin of these areas is often seen to be studded with little beads of moisture when the rest of the foot is dry. The surface of these areas is relatively alkaline. Measurements on ten cases gave an average pH of 6.7 (maximum 7.5, minimum 6.1) as against an average of pH 6.0 (maximum 6.3, minimum 5.65) for eight normal feet. Higher readings are obtained from the more distinctly macerated areas between toes. This suggests that the beads of fluid which appear on the surface may be interstitial fluid and not sweat. The patches are however apparently due to friction over an area macerated by sweat. The men often refer to them as "scalds," and they may be as tender as first-degree burns. In our experience here, hyperidrotic intertrigo and localized hyperidrosis of the soles are more frequent causes of pain in marching and partial disability than is dermatophytosis. Hyperidrosis is frequently associated with flat feet and foot strain seems to be one etiological factor. Many of these patients perspire excessively also on the hands and their sweating is probably neuro- or psychogenic. Some show intense congestion of the feet, and in such cases the hyperidrosis may be secondary to peripheral vascular disease.

None of these causes is easy to control even if detected. Symptomatic treatment adjusted to the severity of the case will often give relief though it rarely results in permanent cure. Formalin, tannic acid, and

alum are the most effective agents. An antiseptic is usually necessary to combat the secondary bacterial infection. In acute exacerbations, the greatest relief is obtained by a foot bath of 1 to 5 per cent potassium alum (1 to 6 oz. per gallon of water). Four per cent formaldehyde (10 cc. of the stock 38 per cent solution to 90 cc. of water) painted on the skin one to three times daily usually stops the sweating for a while. Formalin cannot be used if there is marked fissuring or denudation. In other cases we have seen no irritation, but the possibility of formaldehyde sensitization must be borne in mind. Formaldehyde painting should rarely be continued daily for more than a week or two. It may be followed by [No. 14] *Tannic Acid Paint*, the formula for which is tannic acid 10 gm., castor oil 10 cc., alcohol 95 per cent 90 cc. If this is not effective the formalin painting should be continued once or twice a week. An astringent foot powder should be applied daily: [No. 15] *Alum Foot Powder*, the formula for which is potassium alum exsiccated 25 gm., zinc peroxide (heat activated) 25 gm., bentonite 25 gm., talc powder 25 gm. If the alum is not available, it may be replaced by 10 gm. of tannic acid and the talc increased to 40 gm. If the feet are too sore to tolerate formalin or even alum powder, dressings of tannic acid ointment U.S.P. should be applied following the alum bath. The addition of 5 per cent sulfathiazole to this ointment makes it more effective.

Prophylaxis

Rational procedures for prevention of dermatophytosis are difficult to devise on account of uncertainty as to its origin. Does a fresh outbreak mean a new infection or a recrudescence of a latent infection? There is grave doubt whether exogenous infection is a factor of importance. Inspection of troops shows lesions of probable dermatophytosis in 80 per cent or more. Microscopic examination reveals fungus on the feet of 30 per cent to 50 per cent and considering the fallibility of such examinations, the per cent of actual infection is probably far greater. This high carrier rate diminishes the probability of success by any means aimed at preventing transfer of infection. If prevention of infection is impractical, the only promising prophylactic procedure is the prevention of activation. By this we mean the treatment of incipient and latent cases before they become troublesome. This can be carried out within the framework of present army routine. At monthly inspection, men should stand with their backs to the medical officer and raise each foot so as to expose the sole and the toe webs. Every man showing evidence of dermatophytosis should be given preparations for self treatment, such as benzoic acid paint [No. 1], salicylic acid and merthiolate paint [No. 12], and the ISB paint [No. 11]. He should be required to report for reinspection until he has cleared his feet, and should then be instructed to treat his feet every week throughout the warm season in order to prevent relapse.

The possibility that infection from floors, baths, or laundry, and reinfection from shoes and socks are important factors has never been excluded. Among recruits especially, disinfection of floors and showers, protection of feet by wearing wooden sandals, and the application of a fungicide such as benzoic acid paint [No. 1], salicylic acid and merthiolate paint [No. 12], and ISB paint [No. 11] after bathing are measures well worth trial. At present, their value is unproved and no reliance

can be placed on them. The evidence favors the view that the patient's own feet are the source of the infection which flares up under stress of hot weather, heavy shoes, and violent exercise. Hygienic care of the feet and treatment of incipient and latent infections are the only prophylactic measures that offer great hope of success.

Reprinted from THE BULLETIN of the U. S. Army Medical Department, June, 1944

SOME CONCEPTS OF LOCAL ANESTHESIA

E. W. CORDINGLEY, A.M., D.S.C.
Clinton, Ind.

To INDUCE local anesthesia expeditiously and effectively requires a considerable amount of practice combined with close attention to studied detail. There has been too much "shot gun" administration of local anesthetics, using hand-grip high-pressure syringes and ballooning the tissues with the solution; testing for insensibility to a needle prick immediately, and "shooting in" more and still more until the patient fails to "feel anything." As a result, excessive cell destruction ensues, postoperative pain is great, and the area operated upon is slow in healing.

To best anesthetize an area one should "place" his local anesthetic into the tissues with very little pressure, "flowing it in" rather than forcing it in; *fanning* it out throughout the injected area.

Rather than using large hand-grip syringes with which the podiatrist cannot gauge the excessive force he is using, it would be well to use a 2 cc. Luer, or, as would be preferable with the writer, a 2 cc. Becton-Dickinson Yale Luer-Lok, fitted with the new type B-D Rustless needle, which, with a turn stays firmly in place, and which with its slight "bend forward" at the base of the bevel, enters the tissues without punching out a central core to be forced into the lumen of the needle, to be in turn forced out ahead of the stream of anesthetic, but instead makes a clean, sharp and more nearly painless point-like puncture as the shaft follows the very point of the needle. Thus the minimum of "needle prick" is felt as one makes his first entry into the tissues. Skin wheals should be produced first, with very little anesthetic, and the needle should be introduced with bevel side up *into the skin*, and not under it. After one skin wheal has been made, the second one can be made entirely painlessly by inserting the needle within the first wheal but near its edge, and this can be continued until the operator has halfway or entirely surrounded a toe in case of nail surgery, or until he has produced a series of wheals in semi-elliptical form proximal to the first or fifth metatarsal heads in case of bursae or bone surgery in those areas. The quantity of anesthetic used in producing these skin wheals should be small, one-quarter cc. often sufficing, and one-half cc. rarely needs exceeding. A 26-gauge needle, one-half inch in length will be found ideal here, as less discomfort is felt from the initial needle prick with a fine needle.

Then it is well to change to a 24-gauge, three-fourths inch length, or even a 22-gauge, one inch length, needle for making the deep injections of local anesthetic. One's needle should be long enough that it is never necessary to plunge it into the tissues clear to the hub. A hypodermic

needle's weakest point is where the shaft joins the hub, and if one should have a needle break it will be almost invariably there. If, then, breakage should occur it is a simple matter to grasp the projecting shaft with a pair of forceps and extract it. Needle breakage is usually due to the patient giving an unexpected kick or jerk. The deep injections should be made through the skin wheals, and if the former were properly made, will prove quite free from pain. The needle should not be jabbed in quickly, either in producing the wheals or in making the deeper injections, nor should one indent the skin in pushing against it too slowly. There is a happy medium in which the needle is entered expeditiously as if it were "flowed" into place.

It is now agreed by many writers that the adrenalin, suprarenin or epinephrin added to local anesthetics to serve as vasoconstrictors more often cause untoward symptoms than does the anesthetic itself. Pallor, cold sweating hands and forehead, quick shallow breathing, heart palpitation, dizziness and fainting can often be ascribed to these vasoconstricting agents. A decade ago it was customary to use local anesthetics with 1:25,000 solution of one of these vasoconstrictors, and the professions were being urged to use less of them, or a 1:50,000 solution. Now many authorities advise not more than a 1:100,000 solution, while in digital surgery many advise not using adrenalin, suprarenin or epinephrin in the anesthetic at all, stating that their vasoconstrictor effect may result in gangrene. Without these agents in the anesthetic, the solution will keep, and be usable almost indefinitely, but when they are added, the solutions, originally clear and colorless, turn yellow, reddish or brown and are then unsafe for use, if kept on hand too long. Also, with them, while a near-bloodless field might at times be obtained during the operation, secondary hemorrhage is likely to be profuse, causing the patient much anxiety and discomfiture through the night and even the day following the operation. The writer feels that no local anesthetic should contain more than a 1:100,000 solution of one of these vasoconstrictors (epinephrin, et al), and that they can be better dispensed with entirely. If one were performing an operation under a general anesthetic, he would not be availed of their use, and would find it necessary to control hemorrhage as he operated, and hemorrhage can be controlled as one operates under local anesthesia *sans* epinephrin. A tourniquet can be used to partially control hemorrhage during the actual operation, but it should be loosened every fifteen or twenty minutes for three or four seconds and then reapplied. Sterile pads soaked in extract hamamelis applied to the bleeding area will do much to control capillary hemorrhage, and if larger blood vessels are severed the bleeding ends can be clamped with hemostats. Fortunate is the podiatrist who has a coagulating current machine in his office, because he need only touch the forceps with an electrode to seal off the bleeding vessel. Most of the hemorrhage caused while using epinephrin-free local anesthetics has occurred and been controlled in the office, and secondary hemorrhage is seldom met with to distress the patient some hours afterwards.

Novocaine solutions are usually one's first thought in local anesthetics, and while they were usually used in 2% solutions from the time of their origin in 1915 until about a decade ago, during which time their pH was low, or to state it another way, while their acidity was high, novocaine is now quite frequently employed in 1% solutions. Dentists, however, persist

in using the 2% solution, because they inject it into dense tissues where smaller quantities of solutions cause less ballooning and less post-operative pain. We all remember the intense "waking up" pain we experienced after a tooth extraction, and in stopping to think of it we seldom have such pain after a trip to the dentist now. This is because much of the "waking up" pain was due to the high acidity of the anesthetic solution. Since then, the solutions have been buffered so that they have a pH of around 6.85, just slightly on the acid side of the neutral pH 7. A slight acidity is maintained to better preserve the epinephrin in the solution, although it is not preserved as adequately as it was in the older solutions of high acidity. So, without epinephrin, a novocaine solution can be buffered slightly to the alkaline side, with a pH of 7.1, whereupon it would become a more effective local anesthetic than ever with no "waking up" pains due to the anesthetic. But, of course, post-operative pains may be due to surgical trauma, and it would have no effect upon them. (pH means hydrogen ion concentration.)

The tissues of the feet, and particularly of a toe, are fairly dense, not so much so as those with which the dentist deals, but more so than would be encountered in many parts of the body. We frequently find authors recommending a 4% novocaine solution in anesthetizing the tissue of a nose or external ear, or preparatory to excising a boil, because then only a few drops of the anesthetic are needed, and not much tissue distention is brought about, and so it is logical that a 2% novocaine solution is frequently indicated in podiatric surgery, especially in case of the digits. In using a 2% solution without epinephrin I find that 2 to 2½ cc's of novocaine are sufficient in removing a nail matrix, if the solution is well distributed proximal to the nail. It has been common experience with practitioners using local anesthetics, who inject more and then more until insensibility of the area results, that after the operation has been completed an anesthesia is very profound and remains so for some hours. This points to the fact that many too hurriedly start the operation after the injections; while if they would just wait some fifteen or twenty minutes after a smaller amount of anesthetic is used, there would be ample anesthesia. A good plan is to always keep a sterile syringe and needles in readiness, then to sterilize the skin and immediately start to inject the anesthetic. Then, while it is taking effect, instruments can be sterilized and other details taken care of for the operation. A urine sugar test should be taken prior to any operation upon a foot, and also prior to the injection of an anesthetic, and for this purpose Galatest provides a means for a quick and dependable test.

The reclining position should be insisted upon the patient in every surgical case, whether the surgery consist merely of excising a verruca or is quite extensive. Very often the husky "brave" patient faints the most readily if left in a sitting position.

No attempt will be made in this article to make a relative evaluation of the numerous local anesthetics available to the podiatrist. But in passing it may be well to mention Nupercaine, which we have used for a number of years in some types of cases. Nupercaine is an anesthetic of long duration, its "let down" being so gradual that post-operative pain is frequently obviated even if the operation has necessitated considerable tissue trauma. In mentioning this anesthetic in previous

articles the writer has received letters from podiatrists stating that they like its action and are using it repeatedly, while others report that they have difficulty with it and have switched to novocaine in a given case after attempting to produce an anesthesia with Nupercaine. Following up the latter group, the trouble has been solved. Nupercaine is slightly acid in reaction (a little below pH 7) and its base will precipitate out in the presence of alkalies. It then becomes practically inert. A syringe which has just been sterilized by boiling is likely to be slightly alkaline. Many practitioners use alkaline tablets in their sterilizer to keep down scale; tap water is generally quite alkaline in reaction; chemical sterilizers, into which a syringe is placed after boiling so as to be always ready, are usually alkaline, and sodium dissolves out of the glass of a low-priced soft glass syringe. Nupercaine comes in very hard glass ampuls, and it must be transferred into a hard glass syringe, one such as the B-D Yale for example. After sterilization of the syringe it should be thoroughly rinsed out in 70% grain alcohol. Rubbing alcohol will do provided it is not isopropyl alcohol, since the latter has an oily base which seems to make the base of Nupercaine flocculate. Drawing 70% grain alcohol into the syringe and expelling it three or four times will leave the barrel and piston slightly acid, and the Nupercaine which is then drawn up into it remains clear. (Note: I feel that we all should follow the suggestion of Dr. Harry Hoffman, Chairman of our Council on Pharmacy and Chemistry, to use isopropyl alcohol for massaging and skin sterilizing purposes and thus conserve our dwindling supplies of grain alcohol, but I feel that the amounts of grain alcohol we will use will not be very large for the few purposes where it alone will prove satisfactory.) Then everything we have said about evenly distributing novocaine into the tissues can be reemphasized with respect to Nupercaine. It will not do to balloon the tissues and deposit a large pool here, and, not getting anesthesia, deposit another large pool there. It *must* be deposited evenly throughout the tissues as novocaine *should* be deposited. If these precautions are taken one will be able to obtain a splendid long-lasting anesthesia with Nupercaine, which, ordinarily, will carry the patient well beyond the period of post-operative pain. Ordinarily I use novocaine to produce the skin wheals, even when I am using Nupercaine for the deeper anesthesia. And several podiatrists have written me that they perform an operation under novocaine anesthesia, and then, immediately before bandaging, they inject Nupercaine into the same area to keep down post-operative pain.

All local anesthetics are toxic. We have been told that novocaine is seven (some say nine) times less toxic than cocaine. Also that Nupercaine is more toxic than novocaine. One of our texts tells us that the anesthetic, quinine and urea hydrochloride, is non-toxic. But, toxicity depends upon the individual, and such statements can only be generalizations. Quinine is very toxic to some individuals, and so this latter anesthetic would be toxic to them. Some have an idiosyncrasy to novocaine who have none to cocaine. It seems to be well established, however, that pre-operative barbiturate administration is an antidote for possible toxic manifestations of local anesthesia.

In an article in The Journal of the American Dental Association, Nov. 1941, J. A. Sweeney, D.D.S., Professor of Anesthesia and Exodontia, Western Reserve University School of Dentistry, points out that every dental patient is naturally apprehensive, and that "the highly nervous

or neurotic person may require the administration of a hypnotic. * * * Pentobarbital sodium, sold under a variety of trade names, fulfills most of the requirements for the dental patient. * * * The rapid action of this drug is a boon to the busy dentist. The patient is merely advised to appear at the office one half hour before his appointment. The capsule is administered immediately and the patient is instructed to be as quiet as possible, because conversation or reading or any stimulating activity retards or inhibits the action of the drug." The patient walks to the chair with calm nerves, though sometimes somewhat drowsy. He is quite unconcerned about the anesthetic or surgery to follow. The possibility of surgical shock or other surgical accidents is very remote.

It would seem logical to conclude that the right to administer local anesthetics presupposes that they be used in accordance with the tenets of the best modern surgical practice, and that the safety, perhaps even life, of the patient be safeguarded by the administration of necessary concomitants of local anesthesia.

330 South Main St.

LOCAL APPLICATION OF PENICILLIN

D. C. BODENHAM, M.D.

SKIN GRAFTS of surface wounds and burns are more likely to take if coccal infections can be controlled. Hemolytic streptococci not only stop the spontaneous growth of epithelium and the regeneration of skin grafts, but may even cause regression of all healing processes. Staphylococcus aureus has little effect on growth of epithelium but may cause a serious local and general reaction. Both of these common organisms are often resistant to locally applied sulfonamides, but are highly sensitive to penicillin, reports D. C. Bodenham, M. D., of Bristol, England, after a study of 75 burns and wounds treated with penicillin.

The most effective and economical medium is a cream consisting of lanette wax and soft paraffin containing 100 Oxford units of penicillin per gram. When this mixture is applied daily, cocci will disappear from infected raw surfaces in four to six days.

When the ointment is used beyond one week, the wound becomes soggy and epithelial growth is slowed. Excess moisture will drain if the cream is spread on a 6-inch tulle-gras bandage. The wax-paraffin-penicillin mixture may be kept indefinitely if frozen.

The powder form may be used if the wound is dry, so that the drug is not readily dissolved and absorbed. Sulfanilamide powder containing 5% light magnesium oxide is used to dilute the dry penicillin. The powder may cause pain which is not severe enough to require discontinuance of treatment. The quantity of penicillin used locally may be increased depending upon the severity of infection or the amount of discharge which might presumably dilute the active substance.

Cultures of the wound should be made every forty-eight hours and skin grafting should not be attempted until three consecutive cultures are negative. Staphylococci will usually reappear in the wound five to seven days after penicillin treatment is discontinued. Streptococci reappear later and less often.

No adverse local or general effects were noted after local application of penicillin to wounds. Penicillin placed beneath skin grafts as a prophylactic measure in noninfected wounds did not delay healing; consequently this procedure may prove valuable in the immediate grafting

of wounds.

Bacillus pyocyaneus and bacillus proteus are insensitive to both sulfanilamide and penicillin, but these organisms interfere with successful skin grafting only by the mechanical effect of the profuse discharge which floats grafts away.

Scheme of Local Penicillin Therapy

Type of Infection	*Strength*	*Applied*
1. Active intense infection; pus profuse. (After first negative swab treat as 3.)	Cream 200 units per gram; this yields 8 units per sq. cm.	Every 24 hours
2. Established infection; pus profuse.	Cream 100 u/g. (4 u/sq. cm.)	Every 24 hours
3. Established infection; pus slight or moderate.	Cream 100 u/g. (4 u/sq. cm.)	Every 48 hours
	Or when dry conditions are wanted—Powder mixture: 1,000 u/g. applied as frosting yielding 4 u/sq. cm.	Every 24 hours

Bodenham, D. C., Infected Burns and Surface Wounds. The Value of Penicillin, Lancet 245:725-728, 1943.

PUBLIC HEALTH SERVICE ACT, 1944

THE PUBLIC HEALTH SERVICE ACT, signed by President Roosevelt on July 3, 1944, is another milestone in the 146-year history of the United States Public Health Service.

The act brings together in compact and orderly arrangement substantially all existing law affecting the Service. It eliminates many outmoded regulations, and, in a series of revisions dictated by operating experience, streamlines the administration of the Public Health Service.

In several respects the act broadens the scope of previously established Public Health Service functions. It provides authority to make grants-in-aid to research institutions for study of any disease—in the same way the National Cancer Act of 1937 provides for cancer research. It authorizes expansion of the Federal-State cooperative public health programs, and calls for the establishment of a national tuberculosis control program, patterned after the venereal disease control program.

The final act presented to the President for approval is the result of two years' work and study under the leadership of Representative Alfred L. Bulwinkle, of North Carolina. It is due to the interest and close attention of Mr. Bulwinkle, Senator Elbert Thomas, of Utah, and their colleagues that this essential streamlining of the Nation's public health law has been brought to a successful conclusion.

The new law retains all the important duties which Congress has laid upon the Service in previous legislation enacted over the last half century. Basic responsibilities still include medical and hospital care of American Merchant Marine seamen, the United States Coast Guard, and other Federal beneficiaries; the National Quarantine Service; scientific research; control of biologic products; and care of lepers and narcotic

drug addicts. Assistance to State and Territorial health departments also will continue.

In recent years, the trend of public health work has been toward tackling public health problems individually and directing all available resources to the eradication of widely prevalent diseases which place an unnecessary burden upon the health and economy of the nation. The new law, which authorizes establishment of a tuberculosis control program, makes it possible to extend this type of direct attack. The program follows the pattern of the national venereal disease control program, authorized by Congress in 1938. It places upon the Public Health Service the responsibility of administering grants-in-aid to State health departments, and of conducting demonstrations and research leading toward the eradication of tuberculosis.

The Act also raises the ceiling of Federal appropriations for grants-in-aid to the States for general public health services from $11,000,000 annually (as provided under title VI of the Social Security Act) to $20,000,000. It empowers the Service to use a limited portion of these funds for the training of public health personnel and for special demonstrations in the solution of particular community health problems.

Provision also is made for the strengthening of the commissioned corps of the United States Public Health Service and for the commissioning of specialists in scientific fields relating to public health—such as entomology, chemistry and zoology. Under the law, nurses may now be commissioned in the Service. Other sections of the Act carry over previous legislation giving the commissioned personnel of the Public Health Service in wartime substantially the same benefits and privileges afforded officers of the Army and Navy.

Fundamental reorganization laws expanding Public Health Service functions and strengthening its administration have been enacted through the years. Acts of Congress in 1878, 1890, 1893, and 1906 authorized the Service to prevent the introduction of epidemic diseases into this country from abroad and to prevent the interstate spread of communicable diseases. In 1889, the Service was organized along military lines and provision made for the establishment of a corps of commissioned officers with grades, ranks and rates of pay similar to those of the Army and Navy Medical Corps.

The organization of the Service now includes four major administrative units—the Office of the Surgeon General, the National Institute of Health, the Bureau of State Services, and the Bureau of Medical Services. The staff of the Surgeon General is made up of a Deputy Surgeon General and three Assistant Surgeons General in charge of the three bureaus. In addition, staff officers with the rank of Assistant Surgeon General are assigned to the administration of dental and sanitary engineering activities. The Medical Directory of the United States Coast Guard has the rank of Assistant Surgeon General on the staff of the Surgeon General of the Public Health Service.

The significance of the Public Health Service Act is far reaching. From a legislative point of view, the codification of laws of a Service which came into being in 1798 is of direct benefit, not only to the Service itself, but to the various governmental and State agencies that have to deal with public health. It might well serve as model legislation for all Federal services and bureaus.

THE

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REPORT ON MEETING OF THE TWENTY-FIFTH HOUSE OF DELEGATES

AUGUST 25-27, 1944

DRAKE HOTEL, CHICAGO, ILL.

THE TWENTY FIFTH House of Delegates of the N. A. C. met in Chicago, Ill., at the Drake Hotel on August 25-27, 1944. Dr. H. W. Weinerman, President, presided at all the sessions which were conducted with efficiency and dispatch. All who attended agreed that the meeting was successful in every respect. Thanks are due to the delegates who were present for the earnest consideration which was given to the many resolutions and proposals which came before the House.

Dr. John Walker of Hartford, Conn., who served as President Elect during the past year, succeeded Dr. Weinerman as President. Dr. Walter Fields of Nashville, Tenn., became President Elect and Dr. Leo N. Liss of San Francisco, Calif., was reelected Vice President. A new Vice President, Dr. Stewart E. Reed of Des Moines, Iowa, recently honorably discharged from the Army, was elected to the vice presidency. Among the important resolutions adopted by the House were the following:

A per capita assessment of ten dollars was approved at the request of the Defense Committee.

The Committee presented a proposal which the delegates believed might bring us success in our present program. Like most matters of this kind it is impossible to offer details for publication. However, the proposition was explained to the delegates who in turn were instructed to bring them to the various state societies. In the event that this Defense Committee proposal should not be carried through successfully the amount contributed by each member will apply on 1945-46 dues. Only in the event that success attends our efforts to secure recognition will the funds be used by the Committee. Therefore, it is imperative

that each member pay his assessment promptly. As previously noted the money will be applied as dues if the Committee does not carry out its proposed project. Delegates will be able to offer some additional information verbally at meetings of the societies in the near future. Another resolution increasing annual dues from seven to ten dollars was approved by more than two thirds of the delegates. Among the reasons for this increase was the decision of the delegates to broaden the fields of activity of the various committees of the N. A. C. which have been handicapped in the past by a lack of funds. Part of the increase will also be used in the future to promote a National Foot Health Week under the sponsorship of the Association. The House approved plans for a Foot Health Week in 1945, which were presented by Executive Secretary Stickel. Additional information on this project will shortly be mailed to the delegates and state societies so that individual members can be made aware of the scope of the program and its benefits to the profession.

The N. A. C. will officially participate in the national Physical Fitness Program which began on September 1, 1944. Many items regarding this program have appeared in the public press during recent weeks. It will be the greatest health improvement project ever undertaken, and all reputable organizations will cooperate with the U. S. Government, the American Medical Association, American Dental Association, physical educators, teachers, manufacturers and any other groups interested in promoting health education in this country. The Research Awards for Study of Fungus Infections were announced at the annual banquet by Presidet Weinerman.

Dr. B. F. Austin, State Health Officer of Alabama, gave a very interesting talk on the Wagner Bill, which helped greatly in clarifying many obscure points in connection with that proposed legislation. Supplementary reports on the activities and program of the annual meeting will appear in subsequent issues of THE JOURNAL. This brief presentation is intended to cover only a few of the many important actions taken by the Delegates as the September JOURNAL goes to press.

ANNOUNCEMENT

N. A. C. Award Recipients in Research on Fungus Diseases

THE COMMITTEE of Judges comprising the Officers of the National Association of Chiropodists take considerable pleasure in announcing the recipients of the awards for research in fungus infections which was made possible by a monetary grant from the Mennen Co.

The official announcement was made at the Chicago meeting of the House of Delegates by President Weinerman. Mr. Dieterich, Vice President of the Mennen Co., presented certificates and checks to members of the profession who were selected by the judges.

The first, second and third awards were given respectively to Dr. Wm. F. Eads, Dr. Chas. R. Brantingham and Dr. Lewis F. Schreiber. A brief biography of each of these practitioners is appended.

(Continued on Page 26)

Recipients of N.

FOR RESEARCH ON FU

Sponsored by The Me

The Committee of Judges of the National Association of Chiropodists has granted these Chiropodists the Certificates of Award provided by The Mennen Company—for their

FIRST AWARD—$500

LT. COMMANDER WILLIAM F. EADS, U. S. N. R.

First Chiropodist to receive a commission in the Navy. Member of N.A.C. and C.A.C. Graduate of California College of Chiropody. Practiced in San Francisco.

SECOND AWARD—$250

LT. (j.g.) CHARLES R. BRANTINGHAM, U.S.N.R.

Chiropodist in charge of foot clinic, Naval Training School (W.R.), Bronx, N. Y. Member of N.A.C. and C.A.C. Graduate of California College of Chiropody.

The Mennen Company congratulates the recipients of the Awards for Research on Fungus Infections of the Feet . . . and wishes to express most sincere appreciation for the keen interest of Chiropodists all over the country, as shown by the number and excellence of papers submitted. The results obtained

Pharmaceutical Division, THE MENNEN COMPANY, m

N.A.C. Awards

ON FUNGUS INFECTIONS

The Mennen Company

papers submitted to the Award Project for the Advancement of Research, Study and Treatment of Fungus Infections of the Feet.

THIRD AWARD—$100

LEWIS F. SCHREIBER, M.Cp., New York, N. Y.
Graduate of First Institute of Podiatry. Member of N.A.C. and N. Y. Pod. Soc. Author of many articles and lecturer on chiropodical subjects.

SPECIAL AWARD CERTIFICATES

A. B. Pasternack, D.S.C.
Philadelphia

De Lisle L. Mrazek, D.S.C.
St. Louis

Arthur Sharpe, D.S.C.
Philadelphia

A. M. Segall, D.S.C.
Wilmington, Del.

J. I. Schneiderman, Pod.G.
Peekskill, N. Y.

Leon Wise, D.S.C.
Mt. Holly, N. J.

N. Interrante, D.S.C.
Baltimore

S. Alexander Sorkin, D.S.C.
Upper Darby, Pa.

through this project will further public appreciation of the great and increasing contribution being made by Chiropodists to the health of the Nation. Mennen will continue to cooperate to the fullest extent with the National Association of Chiropodists for the benefit of the profession and public.

makers of QUINSANA—Newark, N. J., San Francisco, Toronto

AWARD RECIPIENTS— RESEARCH ON FUNGUS INFECTIONS

(Continued from Page 23)

FIRST AWARD – $500
Lt. Commander William F. Eads, U. S. N. R.

SECOND AWARD – $250
Lt. (j.g.) Charles R. Brantingham, U. S. N. R.

THIRD AWARD – $100
Lewis F. Schreiber, M.Cp., New York, N. Y.

Special Award Certificates were presented to the following members:
A. B. Pasternack, D.S.C., Philadelphia, Pa.
DeLisle L. Mrazek, D.S.C., St. Louis, Mo.
Arthur Sharpe, D.S.C., Philadelphia, Pa.
A. M. Segall, D.S.C., Wilmington, Del.
J. I. Schneiderman, Pod.G., Peekskill, N. Y.
Leon Wise, D.S.C., Mt. Holly, N. J.
N. Interrante, D.S.C., Baltimore, Md.
S. Alexander Sorkin, D.S.C., Philadelphia, Pa.

Biographical Sketches of Members Receiving Awards

Dr. William F. Eads — First Award

Dr. Wm. F. Eads graduated from the California College of Chiropody in 1931. He has attended the University of California, University of San Francisco and San Francisco State College. He is a member of the National Association of Chiropodists and the California Association of Chiropodists. He has served as scientific chairman in both the national and state organizations on several occasions. He also acted as Director of the Research Department of the California College from 1939 to 1940 where he engaged in special studies on mycology. Dr. Eads also served his alma mater as a member of the clinical staff and as an associate professor in surgery. He practiced in San Francisco prior to entering upon active service in the U. S. Navy.

Dr. Eads was commissioned in the U. S. Naval Reserve on April 7, 1941, with the rank of Lieutenant (j.g). He was the first chiropodist to receive a commission in the Navy and was the first to go on active duty. On May 2, 1944, he was promoted to the temporary rank of Lieutenant Commander.

Dr. Charles R. Brantingham — Second Award

Dr. Charles R. Brantingham is a graduate of Long Beach Junior College and California College of Chiropody. He is a member of Sigma Pi Epsilon, The Scholastic Society of Chiropody, and Theta Upsilon Tau. Dr. Brantingham practiced in Long Beach, Calif., for three years prior to entry into the service. He is a member of the N. A. C. California Assn. of Chiropodists and an honorary member of the Iowa State Podiatry Assn. Dr. Brantingham entered the Navy in March of 1942; his present rank is Lieutenant (j.g.) H-V (S), USNR, with duty as chiropodist in charge of the foot clinic, Naval Training School (WR), The Bronx, New York.

Dr. Lewis F. Schreiber — Third Award

Dr. Lewis F. Schreiber graduated with honors from the First Institute

of Podiatry in 1920. He is a member of the National Association of Chiropodists, New York Podiatry Society and several other scientific and philosophical groups. He specializes in orthopedics and is engaged in practice with his wife, Dr. Kate F. Schreiber. Prior to establishing his practice in New York City, Dr. Schreiber was located in the Homestead Hotel, Hot Springs, Va., and the Greenbrier Hotel, White Sulphur Springs, W. Va. He is the author of nearly seventy-five articles on chiropodical subjects and is engaged in scientific research on the physiology of the feet at the present time. Dr. Schreiber has delivered several hundred lectures to lay and professional organizations on various subjects dealing with the lower extremities.

GOVERNMENT SPONSORS PHYSICAL FITNESS PROGRAM

THE JOINT COMMITTEE on Physical Fitness met in Washington on July 27 for a two-day session. The program was keynoted by Col. Leonard G. Rowntree, Medical Head of the U. S. Selective Service System. Colonel Rowntree emphasized the need for "promotion of physical fitness, which will make better citizens as well as better soldiers."

With a mission to define and study problems relating to the promotion of physical fitness, and to stimulate state, district and local programs for the promotion of physical fitness, the Committee will enlist aid of many independent private organizations as well as Army, Navy and other government groups.

Leaders of practically every large medical organization and physical education groups were present at the beginning of the session. Committees were chosen to make studies on special problems, and report their findings to the Joint Committee.

Committee members hope to make a determination of physical fitness needs and form correction (under medical supervision) of correctable physical fitness defects. It desires to educate for better development and train indoctrination of the nation toward action for improved physical fitness.

Plans are to be laid for a "Special Emphasis Year for Physical Fitness." It is expected that all leading private and government agencies will cooperate in this effort to build our youth into better men and women both morally and physically.

The Committee on Physical Fitness was established by Administrative Order of the President on April 29, 1943, and placed under the direction of the Administrator of the Federal Security Agency. It is working with all leading medical and educational organizations, with their participation and backing, in its all out efforts to establish physical fitness.

NATIONAL PHYSICAL FITNESS PROGRAM BEGINS SEPT. 1

A MAJOR STEP toward national physical fitness — the planning of a Physical Fitness Year—was initiated in July under the direction of a joint committee of the National Council on Physical Fitness and the American Medical Association, the Council on Physical Fitness of the Federal Security Agency announced last month. The year in which special emphasis will be placed on physical fitness started September 1.

The platform recommended by the joint committee as a basis for the year's program was given as follows:

1. The physical fitness of the people of the United States is fundamental to the safety, security, productiveness and welfare of the nation.

2. The attainment of physical fitness is primarily the responsibility of each individual. Leadership toward this goal must rest largely in a democracy, however, on statesmanship manifested through education, medicine, dentistry, public health, industry, labor and similar organized groups.

3. The achievement of physical fitness is dependent on determination of individual health and physical fitness by complete health examinations to ascertain the normality or abnormality of the organs and tissues of the body and by surveys of physical fitness to evaluate strength, skill, stamina and other attributes of physical fitness.

4. Essential to this activity for improvement of national physical fitness is the establishment of methods and facilities for the prevention and correction of preventable and correctable abnormalities.

5. Essential also to national physical fitness is the establishment of methods and facilities for the evaluation of the strength, skill, stamina and muscular state of the body and for the development and maintenance of these factors to the extent permitted by the mental and physical conditions of the person concerned.

6. Information regarding the state of fitness of the nation and of the means by which improvement may be secured shall be disseminated in order to enlist the cooperation of the people to achieve this objective.

7. The experiences of our nation in times of war and distress have established beyond question the vital necessity of developing and maintaining in each individual the utmost self-reliance, physical fitness, and mental and physical health.

The purpose of the Special Emphasis Year on Physical Fitness is to direct the attention of the public to its responsibilities for a stronger, healthier home front, necessary for the successful pursuit of the war and for the peace that will follow victory. It is also part of the plan to effect increased activity on the part of all public and private agencies capable of influencing public opinion, and providing programs and operating them wherever possible.

The Physical Fitness Year, according to the joint committee, will increase materially the activities and responsibilities of the schools and colleges in matters of physical education, and of federal, state and local governments to provide opportunities for the improvement of physical health, to coordinate the activities and support of labor and industry, social and religious groups, patriotic groups and professional and amateur sports organizations concerned in this field. The joint committee stated that it would attempt to utilize to the fullest all media of information and promotion and that the platform would include all possible approaches to the problem of increasing physical fitness in the civilian population of America today.

A POST-WAR DEFENSE PROGRAM FOR THE UNITED STATES

HIGH OFFICIALS in the Army and Navy are emphasizing the need for permanent post-war plans for our national defense. Among the important objectives which have been listed as requiring legislative action by the Congress to insure the maintenance of peace are:

(a) A well-balanced Army ground force to guard the United States;

(b) An air force of sufficient size and type to accomplish any reasonable mission in event of an emergency;

(c) Such additional ground and air forces as may be needed for

defenses and stations outside the United States.

(d) A Navy of sufficient size to guard our own shores on both oceans, the Canal Zone, and other outlying bases, together with a complete complement of aircraft;

(e) Creation of an Army and Navy reserve force from veterans of the present war and boys who have completed one year's training;

(f) Broaden and encourage the organization of the Reserve Officers' Training Corps;

(g) Assist States in equipping and training a National Guard;

(h) Encourage formation of rifle and pistol clubs for training in marksmanship and provide them ammunition and weapons;

(i) Reward competent noncommissioned and petty officers with appointments as warrant officers and use them as instructors of reserves and National Guard; and

(j) Enlistments in Army and Navy to be for three years as now, but with provision for transfer to reserve at end of second year if qualified in duties of organization.

DIAGNOSTIC AND REGISTRY CENTER FOR FUNGOUS DISEASES

THE GROUP of workers studying fungous infections at Duke University has received a grant from the American Foundation of Tropical Medicine for the purpose of acting as a diagnostic and registry center for fungous diseases of man. The announcement in Tropical Medicine News outlines this service as follows:

1. Identification of fungi already isolated from patients suspected of having fungous disease.

2. Pathologic study and registry of biopsy and autopsy materials from patients suspected of having fungous infection. This is not to conflict with the diagnostic and registry services maintained by the several branches of the armed forces.

3. A complete set of cultures of pathogenic fungi will be sent on request to any medical school for use in teaching courses in tropical medicine. To guarantee arrival of the fungi in proper state for study, it is necessary that requests for this material be sent at least one month prior to the time that the cultures will be necessary for demonstration.

By special arrangement, serologic tests will be done in certain of the fungous infections, and vaccines for skin testing and therapeutic use in certain of the fungous infections will be sent on request.

Specimens for pathologic study should be sent to Dr. Roger D. Baker, Duke Hospital, Durham, N. C. All other requests will be handled through the office of Dr. D. T. Smith, Duke Hospital, Durham, N. C.

CALL FOR MANUSCRIPTS

MEMBERS ARE REQUESTED to submit manuscripts for publication in future issues of the Journal. Some suggested subjects which will be of interest are: case histories, shoe therapy, professional economics, office arrangement, orthopedics, anesthesia, children's foot ailments, industrial foot care, dermatology, helomata, neurovascular disturbances, diseases of the nails, hydrotherapy, public education and articles dealing with Chiropody.

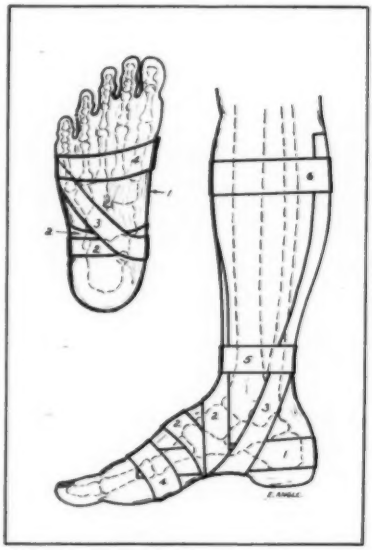
TREATMENT FOR THE CONDITION KNOWN AS SHIN SPLINTS

H. B. GOODELL, D.S.C.
Athletic Director
South Dakota School of Mines

THE AVAILABLE literature on the treatment of the condition known to the athletic world as shin splints is indeed very meager and consists of repetition upon repetition, with nothing offered as a truly satisfactory treatment. The old and customary statement relative to shin splints runs something like this: Shin splints are caused by running on a hard surface early in the season with continued, constant jarring; and they are slow in recovery. Heat and massage with three-quarter circular strapping, squeezing the gastrocnemius, and, of course, rest are the adjuncts most needed in securing a cure; and this should be continued long enough to permit the torn muscle attachments to heal. These statements are about all one can find relative to treatment for shin splints. We all know that this is not a satisfactory treatment.

For the basis of this discussion and as a scientific background from which to work, we shall review the origin and insertion of the two major muscles which maintain the longitudinal arch of the human foot, and thus note the scientific reasoning upon which the treatment is based.

The first primary support of the longitudinal arch, the tibialis anticus muscle, as the name implies, is situated on the anterior and outer side of the tibia. It arises from the outer and upper two-thirds of the shaft of the tibia and from the deep fascia. Then these fibers pass downward and terminate in a tendon which is apparent on the anterior surface of the muscle on the lower third of the leg. It is inserted into the inner and under surface of the internal cuneiform bone, and into the base of the metatarsal bone of the great toe. The action of the tibialis anticus flexes the foot upon the leg; and from the obliquity in the direction of its tendon this muscle raises the inner border of the foot (inverts) and draws (adducts) the forefoot toward the median line of the body.



Taping Procedure

The second major muscle which maintains the arch of the foot is the tibialis posticus, which lies between the flexor longus hallucis and the flexor longus digitorum; it is the most deeply seated muscle of all the muscles of the leg. It originates by two pointed processes and arises from the interosseous membrane from the posterior surface of the shaft of the tibia and from the upper two-thirds of the internal surface of the fibula. The fibers pass downward and terminate in a tendon which passes through a groove behind the inner malleolus,

thence beneath the inferior calcaneoscaphoid and internal cuneiform bones. It also gives off fibrous expansions: one of which passes backward to the oscalcis; others outward to the middle and external cuneiform and cuboid; and some forward to the bases of the second, third, and fourth metatarsal bones.

Primarily, the action of the tibialis posticus is to extend the foot upon the leg and maintain the longitudinal arch. This muscle is very important because it is also a powerful adductor of the foot and because it acts with the tibialis anticus to antagonize the powerful perni muscles which adduct or draw the foot outward. Note the wide expanse covered by the fan-like insertion of this muscle and the manner in which its tendons support the inferior astragaloscaphoid (spring) ligament, which plays so important a part in maintaining the inner segment of the longitudinal arch.

Upon observation, one may think the tibialis posticus originates too far posteriorily on the tibia and fibula to cause soreness on the front of the leg. However, upon careful examination one will find the muscle originating as much on the inner surface of the tibia and fibula as on the posterior surface. There are many other leg muscles and tendons which support the longitudinal arch, but this support is in a minor degree. By the hypothesis based upon the origin, insertion, and action of the tibialis anticus and tibialis posticus, these muscles are the major offenders in the condition known as shin splints.

Because the old and accepted methods of treatment have been used, all coaches and trainers have been troubled with lost time because of shin splints. In 1937, a year in which we had an "epidemic," so to speak, of shin splints, I spent a great deal of time in trying to solve the trouble.

Upon reviewing the anatomy of the leg and using a great amount of trial and error, I had the happy thought of supporting the longitudinal arch as a means of securing relief for shin splints, and, thus, I stumbled upon the cure for shin splints in that manner.

By supporting the longitudinal arch, every case was cured within a two-week period, without loss of time to the athlete during the curative period. From 1937 to 1939, I never failed to cure a case of shin splints with the taping, as illustrated in the accompanying diagram. The specific instructions are as follows:

Use one and one-half inch tape. With tape Number 1, start on the outside of the foot just behind the head of the fifth metatarsal; bring the tape back along the outside of the foot and around the heel, and then forward on the internal lateral border of the foot to the back and dorsal head of the first metatarsal. Start tape Number 2 on the inside of the foot directly over the scaphoid; go up over the top of the foot and down on the outside; continue under the foot until the tape has gone all the way around the foot. Bring tape Number 2 up on the inside of the leg, just in front of the internal malleoli, and continue up the front of the leg to within three inches of the patella. Start tape Number 3 back of the head of the fifth metatarsal; go under the foot and up on the inside of the leg, just behind the internal malleoli; continue up the side and back of the leg to within three inches of the head of the fibula. Tapes Numbers 2 and 3 should not lift the arch of the foot too high. Start tape Number 4 on the outside of the foot, just behind the head of the fifth metatarsal, over the end of tape Number 3; pass

it down and under the foot; bring it up on the inside of the foot, just behind the head of the first metatarsal; continue over the dorsal portion of the foot; finish and fasten the end of the tape over the starting position; overlap the tape one or two inches. This gives a band completely around the foot just behind the heads of the metatarsals. Use tapes Numbers 5 and 6 as anchors or binders for tapes 2 and 3, by going around the leg at the top with tape Number 5 and around the leg just above the malleolis with tape Number 6.

I also accompany the taping with diathermy, which is given once a day for forty minutes. When the athlete is not out for practice, I keep an analgesic pack on the anterior surface of the leg.

With this treatment, there was not one case which did not improve satisfactorily within two weeks, while the athlete continued his regular practice and game participation.

I have also found that shin splints may be prevented by the use of proper bandaging. In the fall of 1939, beginning with the football season, I started using the bandage which was used and described by J. M. Cox, Harvard trainer, in the book *Athletic Injuries—Prevention, Diagnosis and Treatment*, by Thorndike, Chapter XXII, p. 189, Figs. 100 and 101. The bandage was also illustrated and described in *The First Aider*, published by the Cramer Chemical Company, January, 1942, p. 37. I first learned of the bandage from Duke Simpson, formerly of Harvard. I used this bandage on all members of the squad. By using a two-inch ankle wrap, eighty inches long for each foot, I added slightly to this bandage by finishing with a regular figure eight. The principal reason for using this bandage in the beginning was to protect the ankle from sprain, which it did. However, the surprising thing was the fact that we did not have one case of shin splints develop during the season, something that had never happened before in the history of football seasons, in my experience.

Upon the completion of the football season, I insisted upon the basketball squad using the same type of bandage, and, again, there were no cases of shin splints. This type was also used for the members of the track squad; it produced the same results. The practice has been followed with all athletes, since that time, in all sports. In the time since 1939, we have had but one case of shin splints start to develop. I am sure that was due to the bandage not having been applied properly. This case cleared up within a week with the use of the adhesive strapping and analgesic pack, before mentioned.

The coaches and athletes in all sports feel the bandage does not hinder the athlete's performance in any way, in any sport. Both athletes and coaches are enthusiastic about the results of its use.

By the use of these methods for the prevention and cure, I am sure that shin splints will become one of the minor ailments of athletes, instead of a major and annoying condition as in the past.

Acknowledgment for the critical reading of the manuscript is due Professor Howard H. Wells of the Department of English, South Dakota School of Mines and Technology; for the drawing Ellwyn Angle, a student in the School of Mines and Technology.

Rapid City, So. Dak.

"KEEP AMERICA MARCHING"

PENETRATION OF SULFONAMIDES INTO SKIN

STRAKOSCH AND CLARK performed in vivo experiments on guinea pigs and human beings to determine the penetration of sulfonamides from various vehicles into the skin. Skin biopsies were analyzed for total sulfonamide concentration after varying times of application. Sulfanilamide, sulfathiazole and sulfadiazine, in a comparable base at comparable concentrations and times of application, gave comparable tissue levels, demonstrating no difference in penetration into intact skin. Sodium sulfacetimide ("Albucid soluble"), on the other hand, gave greater penetration after a three-day application time than the sulfonamide bases tested. Increasing the concentration did not increase the absorption by the intact skin of sulfanilamide, sulfathiazole and sulfadiazine. Even sodium sulfacetimide showed only a slight effect of concentration. Increasing the time of application increased the skin absorption of sulfonamide in all cases, especially of sodium sulfacetimide. Of seven ointment bases examined, two oil in water and five water in oil emulsions, the type of emulsion had no effect on the absorption of sulfonamide by the skin, including the sodium sulfacetimide. One water in oil emulsion was superior to the others tested. An ointment containing a solubilizer and a wetting agent in greater amounts than in the other bases studied did not give better absorption of sulfathiazole by the skin than the other bases. Injured skin absorbs much greater amounts of sulfonamides from ointments than intact skin. Sodium sulfacetimide is especially penetrating into injured skin. Injured skin absorbs sulfonamides from wet packs to a much greater extent than from ointments.

Studies on Penetration of Sulfonamides into Skin: II. Sulfathiazole, Sulfadiazine and Sodium Sulfacetimide. E. A. Strakosch and W. G. Clark.

MORTON'S METATARSALGIA

BAKER AND KUHN report 14 operations for removal of tumors of the fourth plantar digital nerve to confirm the operative results reported by Betts and by McElvenny in patients with Morton's metatarsalgia. They show that Morton's hypotheses have been disproved by the works of Betts and of McElvenny and by the cases herein reported, as the tumors have been found to lie in the web space between the third and fourth toes. The authors emphasize that Morton's metatarsalgia syndrome is caused by a tumor in the fourth plantar digital nerve. The cause of this lesion is undetermined, but the anatomic relationships of the nerve and the pathologic findings indicate that it is a degenerative fibrosis of the nerve with neuromatous proliferation resulting from or irritated by repeated trauma. The characteristic history of the syndrome and the presence of a localized tenderness to deep palpation in the third web space or between the third and fourth metatarsal heads on the dorsal surface of the foot make the diagnosis simple. Excision of the tumor relieves the symptoms.

Morton's Metatarsalgia: Localized Degenarative Fibrosis with Neuromatous Proliferation of Fourth Plantar Nerve. L. D. Baker and H. H. Kuhn—p. 123 Southern Medical Journal, March, 1944.

PATRONIZE
OUR
ADVERTISERS

OSTEOPATHIC REGISTRATION AND POST GRADUATE PROVISIONS IN CALIFORNIA

HAROLD M. HOGAN, D.S.C.
Sacramento, Calif.

THE FOLLOWING is taken from the osteopathic practice act in California. I suggest its publication because numerous requests for this information have been received during the past few months.

"Each person holding a certificate issued by the Board of Osteopathic Examiners residing in or out of California shall pay to the secretary-treasurer of the Board of Osteopathic Examiners an annual tax and registration fee on or before the first day of January of each year and each person must submit together with the annual tax and registration fee, satisfactory evidence showing that the applicant has completed during the preceding year a minimum of 30 hours of professional educational work as approved by the board."

COMMUNICATION

DEAR EDITOR:

I whole-heartedly agree with C. E. Mathews that our recognition should be gained on our merits. Not even for a minute would I dare to say otherwise. But, is our training and knowledge any less than that of a commissioned nurse?

Is it not a fact that many foot suffering servicemen have been helped to stay more hours at their stations by virtue of the attention given by chiropodists? The navy has recognized the fact in a communication to the Editor of THE JOURNAL in an issue printed several months back.

It is not the lack of knowledge or the lack of usefulness that holds our recognition back. I maintain it is the lack of a well planned and well supported publicity campaign to put our message across most effectively to the men in Congress.

By "well supported" I mean that all of us must pledge our personal interest, our funds, and our constructive criticism to the program that will promote the welfare of our whole professional group. Such whole-hearted cooperation can only lead to a speedier recognition by the responsible officials of the armed forces.

Yours for a speedy victory,

JOSEPH MAGAZINE, Pod. G.

IONIZATION USED BY NAVY FOR FUNGUS INFECTIONS

MARINES AND sailors are getting copperplated feet to stop athlete's foot, Sergeant Alvin M. Josephy, Jr., a Marine Corps Combat Correspondent in the South Pacific, reports.

The copperplating is a form of treatment which Navy doctors have found so successful in banishing the troublesome fungus infection that they believe further use of the method is warranted.

The patient places his feet in a copper sulfate solution containing an ordinary copper plate. Copper bands, soaked in salt water for good contact, are fastened around the ankles and connected to six-volt storage batteries.

Treatment takes about six minutes and is repeated for six or seven days. Although copper particles temporarily adhere to the patient's feet, there is neither discomfort nor discoloration.

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PROPHYLAXIS AND FIRST AID FOR IMMERSION FOOT

PROPHYLAXIS and first aid reduce the necessity for amputation in case of immersion foot. Removal of constricting clothing, a heavy coating of grease on legs and feet, and circulation-stimulating exercise of the feet are recommended as preventive measures by Surg. Comdr. D. R. Webster and associates of the Royal Canadian Navy. First aid rules are: (1) keep the patient off his feet and keep him dry and warm except for his feet; (2) lightly dust sulfanilamide powder on wounds, cuts or sores; (3) wrap legs in soft clean material and keep them elevated on pillows; and (4) get a doctor as soon as possible. Avoid washing or soaking, and use of antiseptics, lotions or ointments, except the sulfanilamide powder.

DOCTOR,
TRY IT FREE!

NOVOTHESIA (Dicks) is a quick-acting local anesthetic of definite usefulness in the practice of Chiropody. Produces complete numbness in the treatment of hard and soft corns, ingrowing toe nails and many other painful conditions of the feet. Inspires confidence in the patient; makes your work easier, quicker.

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SPECIALTY PRODUCTS COMPANY
431 Bourbon St., New Orleans, La.

STATE SOCIETY NEWS

MISSOURI

THE TWENTY-EIGHTH annual convention of the Missouri Association of Chiropodists was held at the Hotel Governor, Jefferson City, on May 27-28, 1944. Dr. E. W. Cordingley of Clinton, Ind., was the principal lecturer. In the future the Association will follow the plans used at the recent meeting by having a single speaker present a series of lectures.

Two new committees were created—a state post war planning committee which will cooperate with the N. A. C. Post War Planning Council and the Chiropody Advisory Committee which will cooperate with the State Board of Health. Drs. G. B. Clark, St. Louis; C. M. Stewart, Jefferson City; L. A. Hansen, Kansas City, will serve on this committee, conduct examinations, prosecute illegal practitioners and guide the chiropodists of the state on matters pertaining to the recently adopted resolution by the State Board of Health relating to advertising.

The following officers were elected:

President Elect, Dr. Leo Sheldon.

Vice Pres., Dr. E. O. Hudson.

Executive Secretary, Dr. F. M. Peters.

Treasurer, Dr. R. R. Mernecke.

N. A. C. Delegate, Dr. L. A. Hansen.

N. A. C. Alternate, Dr. G. B. Clark.

It was decided that the official state bulletin be published in St. Louis during the coming year. Retiring president Hansen installed the new president, Dr. Geo. B. Clark.

MASSACHUSETTS

DR. HARVEY ATKINSON of Belmont will assume the presidency of the Massachusetts Chiropody Association at the first fall meeting. Dr. James T. Helms of Watertown has succeeded Dr. Lawrence Rivers as Secretary. Dr. T. Edward Quinn of Pittsfield will serve as the Editor of "Foot Notes" and Dr. L. R. Neddo of Holyoke has been appointed Business Manager. Drs. J. W. Healy of Westfield and Hugh J. Gallagher of Somerville were reelected First and Second Vice Presidents, respectively.

Dr. Herbert Johnston of Boston acted as master of ceremonies at the annual outing which was held in Worcester under the direction of Drs. Warren Spear and Sara Weston.

A state-wide drive for new members of the M. A. C. and N. A. C. is now in progress.

CONNECTICUT

DR. RALPH E. SANSOME of Hartford, Conn., is recuperating at St. Francis Hospital following a recent operation. He is a member of the Connecticut State Board of Examiners in Chiropody and is Secretary of the American Society of Chiropodical Roentgenology.

WISCONSIN

Important Announcement

THE DATES of the Twenty Fifth Annual Convention of the Wisconsin Chiropody Society have been changed to September 30th and October 1st. The sessions will be held at the Schroeder Hotel in Milwaukee.

BUY WAR BONDS

THE CHICAGO COLLEGE OF CHIROPODY

and

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OCTOBER 2, 1944

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SHOE THERAPY

"Shoes and Feet"

By

FRANK J. CARLETON, D.S.C.

Professor of Mechanical Orthopedics, Temple University School of Chiropody

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SASKATCHEWAN

PHYSICIANS, dentists, pharmacists, nurses and Chiropodists are all required in larger numbers than at present to supply the need for adequate health services to the population, in the opinion of the Saskatchewan Reconstruction Council. This information is contained in the report of the Council which it recently submitted to the government of that Canadian province after public hearings dealing with all phases of post-war reconstruction. The deliberations of the council extended over several months, and representations were heard from all shades of opinion and every section of the community.

The Saskatchewan Association of Chiropodists referred in their brief to the fact that their profession was not overcrowded and while the Association warned against permitting any but those who became qualified to practise, there would appear to be opportunities for fully trained practitioners. "From the standpoint of professional personnel in the health field there would appear to be no problem except that of obtaining sufficient numbers to meet the needs of Saskatchewan citizens in the post-war period," the report added.

Among the matters mentioned in the council's report, it is noted that, "The Saskatchewan Association of Chiropodists recommends the use of chiropodists in an advisory capacity in athletic and physical fitness programmes and in teaching shoe salesmen how to fit shoes properly." "Inspection of the feet in medical inspection procedures," was recommended together with other provisions relating to School Health Services.

The Council report also recommended that the government give serious consideration to the future feasibility of establishing a school for Chiropody and perhaps one for Optometry at the University of Saskatchewan. This would be in connection with the proposed school of medicine which is definitely being planned as a post-war project.

The views of the Saskatchewan Chiropodists were placed before the Council in March, 1944 by Dr. W. A. Waddell, of Regina, who is President of the Saskatchewan Association.

MYASTHENIA

EUGENE C. RICE, M.D.
Washington, D. C.

FOR MANY months a patient had complained that when she left the house and walked more than a block her right leg lost its power to function, and in order to continue walking she had to depend on the power of her thigh muscles. In the home this did not occur, perhaps because no single period of walking was long enough to exhaust the motor impulses. There were no other symptoms; just difficulty in ambulating.

In myasthenia, the motor impulses flow freely through nerves until they reach end fibers, which fail to carry on the impulses to motion.

I found that several drugs are recommended. Among them is guanidine hydrochloride given orally or intravenously (a 2% solution in physiological sodium chloride is used for the intravenous administration).

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To that end, it was stated:

In order to accomplish this with the least delay, it is absolutely necessary to eliminate a large volume of unwanted newspapers and periodicals which are being deposited into the mail system by careless and unheeding agencies. This matter can be handled by the Navy itself and a concerted effort on the part of all hands will correct the situation effectively and improve the delivery time of such mail that is wanted.

The following procedure shall be followed:

(a) Magazines and newspapers desired by addressee.

Inform all publishers who have incorrect addresses of the correct address, identifying the old address and key number appearing on the wrapper or label. (Old addresses and key numbers are necessary to enable publishers to make prompt correction.)

(b) Magazines and newspapers not wanted by addressees.

Such mail shall be endorsed or stamped "REFUSED" and returned to the Navy mail clerk.

Ships and stations not having a Navy post office aboard shall forward such endorsed mail to the nearest Navy post office.

Navy mail clerks shall forward to the publisher Post Office Form 3578 and treat the newspapers and magazines in accordance with Sec. 808. Postal Laws and Regulations.

The above plan will improve mail service for those who want their magazines and newspapers and keep the publishers notified of their change of address.

Commanding officers of all ships and stations are enjoined to cooperate to the fullest extent in the execution of this plan.

CALIFORNIA COLLEGE INSTITUTES FUND RAISING CAMPAIGN

THE HOUSE of Delegates of the California Association of Chiropodists at its meeting in San Francisco May 28, 29, 30, 1944, unanimously approved the "Ten Dollar a Month Plan" proposed by Dr. Thomas C. Hughes.

The Chiropodists of California have contributed amounts varying from $5.00 to $1000.00 for support of the California College of Chiropody. Some give $100.00 a year regularly. Others do not contribute at all, either because they do not know how to go about it, or are not familiar as to why we need this revenue. To make things easier we are creating a "$10.00 A MONTH CLUB." We are now signing up all those that will contribute *$10.00 a month for the next six months.* This is not very much money for each member or nonmember, but it will certainly be a great help if we can receive $10.00 a month from 200 or 300 of our practitioners.

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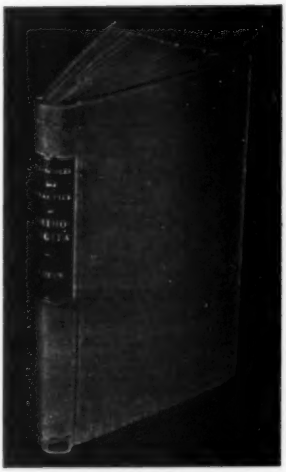

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FIRST-AIDER AWARDED D.S.C.

When Lt. William O. Sporbert, 28, Wesport, Conn., chiropodist, was a Red Cross First Aid and Water Safety Instructor in Mineola and other Long Island towns shortly before the war, he could not foretell that his first aid and water safety training would one day help to win for him the Distinguished Service Cross "for extraordinary heroism in action."

In the darkness of an October night in Italy, while under enemy fire, Lt. Sporbert led his platoon in placing a guide rope across the swiftly flowing, treacherous Volturno River, to enable the remainder of his battalion to cross. After two unsuccessful attempts the guide rope was firmly secured, and Lt. Sporbert led the advance across the Volturno.

Stepping on a concussion mine, he was blown into the river, wounded and temporarily blinded from shock. After receiving first aid he set out to rejoin his platoon. En route he paused to give first aid to another wounded soldier and again exploded a mine.

This time seriously wounded, he nevertheless insisted that other wounded be given first aid before himself. His courage and determination to carry on despite his wounds inspired his platoon to greater effort in taking its objective.

A veteran of the campaigns in North Africa, Tunisia, Sicily and Italy, Lt. Sporbert was recently awarded the Distinguished Service Cross at a formal ceremonial parade at Fletcher General Hospital, Cambridge, Ohio, where he is convalescing.

From "American Red Cross Reporter" May-June, 1944.

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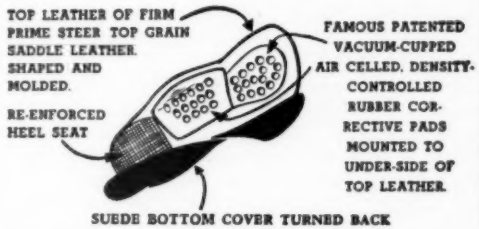
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COMMUNICATION

DEAR EDITOR:

In the June issue of the N. A. C. JOURNAL Dr. O. N. Schuster (Lt. Com. H-V. (S) U.S.N.R.) makes some statements about my articles on children's feet which seem to show a failure to grasp the significance of what I tried to say.

Dr. Schuster makes the following points—

1. "That our diagnoses were being made on the feet of children who were not yet standing alone."

2. "That excessive weight, malnutrition, and febrile diseases are factors in the production of weakfoot."

3. "That evidence must be gathered to decide whether *weakfoot* exists before the foot is adapted to weightbearing."

4. "That the diagnoses of potential weakfoot would necessitate the use of X-Rays and a complete study of the neuromuscular apparatus with the aid of an oscillograph (cathode ray)."

I wish to clarify my statements by answering Dr. Schuster in this way.

1. My diagnoses were based on precise evolutionary data and on the observation of the feet of preschool children (ages seven months to five years) and on the family history; the pronation being followed from infant to parent to grandparent.

2. Disease factors which produce greater weakfoot deformity were not discounted. The conditions under discussion were all postural deformities.

3. In Dr. Schuster's third and fourth points he uses the term weakfoot to signify an actual muscular or ligamentous weakness.

This is not the point I wished to make at all. I stated clearly that I was talking about a postural deformity and not a disease process. Pronation was observed in the feet of the child who begins to stand, and this was an evolutionary weakness in the foot posture of the child. As Morton and others pointed out this is a structural weakness and not a weakness due to lack of power. The objective signs of pronation are present, and can be observed. They do not improve (beyond a small amount) as the child grows. Schuster admits this is the case in "fifty to sixty per cent of children between five to twelve years of age."

The use of the X-Ray and the oscillograph would be of absolutely no value here since again we would be misconstruing the term weakfoot to mean a definite pathological loss of power. I tried to avoid this term and to use pronation as a substitute wherever I could. The term weakfoot is an unfortunate one and should be confined to very specific cases.

HERMAN R. TAX, Pod.G.

NOTICE TO STATE SOCIETY PRESIDENTS

Please forward the names of the Chairman and members of your State Post-War Planning Committee to the Executive Secretary as soon as possible.

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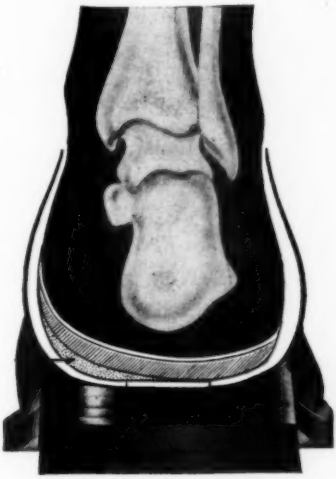

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